

John C. Stennis Space Center Stennis Space Center, MS 39529-6000

COMPLIANCE IS MANDATORY

John C. Stennis Space Center REQUIREMENTS FOR NUMBERING AND MOUNTING LOCATOR PLATES TO SSC MECHANICAL COMPONENTS AND PRESSURIZED VESSELS AND TANKS

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Document History Log

Change/ Revision	Change Date	Originator/ Phone	Description
Basic	04.14.2010	D. Dike/ ext. 2803	Initial release, supersedes SSC STD 97-005. Added 5.0d: Locator number on a component shall indicate the designated system fluid in which the component is installed under normal operations.
A	9.30.2013	D. Dike/ ext. 2803	Incorporates and supersedes SSTD-8070-0111-IDCODES, Requirements for Numbering of SSC Locations, Mechanical Components, and Pressurized Vessels and Tanks, and SSC-97-004, Mechanical Component Modification and Identification Marking. SSC CEF Archive Note: This standard also supersedes SSC Contract NAS13-100, Appendix B, Standards and Specifications Plan (368-75-005).
В	6.30.2015	S. Le Ext. 3816	Updated cover sheet to reflect approval by PMD, and concurrence by E&TD and SMA. Updated references and acronyms. 5.0 Locator Plates and 5.1 Locator Plates Specifications: Defined locator plates to include adhesive labels. Added 5.1.3 Vinyl Label Specifications for adhesive labels. 5.2 Mounting Specifications: Updated mounting specifications. 5.9 Number Format, Table 1 Mechanical Component identification Letter Codes: Changed "H" designation from "GH-Flow Meter" to "Flow Meter"; and "T" designation from "Flow Meter" to "Not Assigned". Replaced "FOSC" with "NASA or its designee" in all references throughout document.
B-1	02.12.2016	R. Carol Wolfram 8-1164	Administrative change. Replaced "NASA or its designee" with "SACOM" throughout document.

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1.0 PURPOSE

This John C. Stennis Space Center (SSC) standard (SSTD) provides a uniform method of assigning and affixing Specification Control Drawing (SCD) numbers and locator plates to mechanical components site-wide, as well as assigning and affixing identification (ID) numbers to pressure vessels and tanks site-wide.

2.0 APPLICABILITY

This standard applies to all SSC National Aeronautics and Space Administration (NASA) organizations, resident agencies, contractors and sub-contractors involved with assigning, affixing, modifying and maintaining the numbering system for components, pressure vessels, and tanks.

This standard further applies to:

- a. Newly installed mechanical components and existing mechanical components to which ID numbers have not been assigned;
- b. Locator plates, which shall be used to identify components and pressure vessels/tanks site-wide; and,
- c. Component locator or tank vessel ID numbers, which shall be used on Site-wide Operational and Repair Documents (SORD) drawings and related documentation.

NOTE: This standard does not apply to mechanical components with previously assigned ID numbers or to component locator plates that are in good condition but have a material, format, or mounting method different from that described in this standard.

3.0 REFERENCES

All references are assumed to be the latest version unless otherwise indicated.

SORD DWG 54000-P001, SSC Piping Schematic Legends
SPR 1440.1, SSC Records Management Program Requirements
SSTD-8070-0001-CONFIG, SSC Facilities Engineering Documentation Standard
SSTD-8070-0005-CONFIG, SSC Preparation, Review, Approval and Release of SSC Standards
SSTD-8070-0006-CONFIG, SSC Component Servicing Processes and Documentation
SSTD-8070-0108-IDCODES, Plate, Conduit Identification

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4.0 RESPONSIBILITIES

- a. Users of this SSTD shall comply with its requirements, ensure use of the correct version of this SSTD and the documents it references, and inform the appropriate organization of needed changes in accordance with SSTD-8070-0005-CONFIG.
- b. Responsibilities for the use and control of this SSTD and for the review and approval of revisions or cancellation of this SSTD shall be as specified in SSTD-8070-0005-CONFIG and the applicable documents referenced therein.

5.0 LOCATOR PLATES

Locator plates (applicable to aluminum plates, phenolic plates and adhesive labels) display component locator numbers that identify critical mechanical components by type of component, general area on site, specific location, and system fluid. Central Engineering Files (CEF) shall assign component locator numbers.

- a. Critical systems requiring locator plates include: 11B, Oxygen; 11C, Hydrogen; 11D, RP-1; 11F, Nitrogen; 11G, Helium; 11H, High Pressure Air; 11J, High Pressure Industrial Water; and 11K, Hydraulic Fluid.
- b. If a component is removed from its system, identification must be maintained for the component and for the component's location within the system.
- c. Locator number on a component shall indicate the designated system fluid in which the component is installed under normal operations.

5.1 Locator Plates Specifications

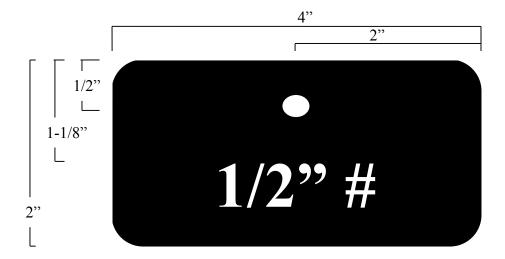
Locator plates shall be constructed from either photosensitive anodized aluminum (photofoil), laminated phenolic (plastic), or adhesive vinyl.

- 5.1.1 Photosensitive Anodized Aluminum (Photofoil) Plate Specifications
 - a. The plate shall have a .032 inch nominal thickness, black color, and dull finish.
 - b. The locator number shall be printed with film positive to produce aluminum letters with a black background.
 - c. All sharp edges shall be removed.

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- d. All corners shall be rounded at a radius of 1/32 inch to 1/8 inch.
- e. Lettering shall be upper case, condensed, sans-serif, and ½ inch high.
- f. Letters shall be centered horizontally.
- g. Letters shall be 1-1/8 inch from the top of the plate.
- h. If the plate is to be attached with a bracket, a 3/8 inch hole for the bracket screw shall be placed ½ inch from the top and two (2) inch from the side of the plate.
- i. Plate dimensions shall be as shown in Figure 1, with a tolerance of $\pm 1/16$ inch.

Figure 1
Photofoil Locator Plate with Hole for Bracket Attachment



5.1.2 Laminated Phenolic (Plastic) Plate Specifications

- a. Locator plates shall be laminated phenolic (plastic) consisting of three layers, black-white-black, such that engraving letters and numbers are white on a black background.
- b. Plates shall be 1/16 inch thick.

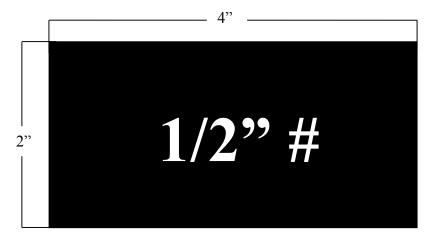
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- c. Plates shall not exceed 1-1/2 inch width by five (5) inch length. Plate size may be smaller to accommodate small components.
- d. Letters shall be upper case, condensed, sans-serif, and ½ inch high.
- e. The locator number shall be centered vertically and horizontally on the plate, as shown in Figure 2.

5.1.3 Vinyl Label Specifications

- a. Plates shall not exceed 1-1/2 inch width by five (5) inch length. Label size may be smaller to accommodate small components.
- b. Letters shall be upper case, condensed, sans-serif, and ½ inch high.
- c. The locator number shall be centered vertically and horizontally on the plate, as shown in Figure 2.

Figure 2
Plastic and Vinyl Locator Plates



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5.2 Mounting Specifications

Locator plates should be mounted adjacent to the component in an easily visible position where the identified component cannot be confused with another nearby component. Locator plates may be mounted directly on the component when it is impractical to mount on an adjacent location. Locator plates may be mounted according to the adhesive, bracket, or wire methods.

5.2.1 Adhesive Method

- a. Plates may be installed with Room Temperature Vulcanizing (RTV) -102 or equivalent in areas where the surface temperature does not exceed the range of -75° F to 300° F.
- b. RTV compounds are not liquid oxygen (LOX) compatible.
- c. RTV compounds shall not be used in LOX or gaseous oxygen (GOX) areas.
- d. Care should be exercised to prevent adhesive materials from encroaching LOX or GOX wetting surfaces or flange crevices.

5.2.2 Bracket Method

Plates may be installed onto brackets which are mounted on or near the component. If a bracket is used, a 3/8 inch hole is centered horizontally on the plate to accommodate the screw that attaches the plate to the bracket. (See Figure 1.)

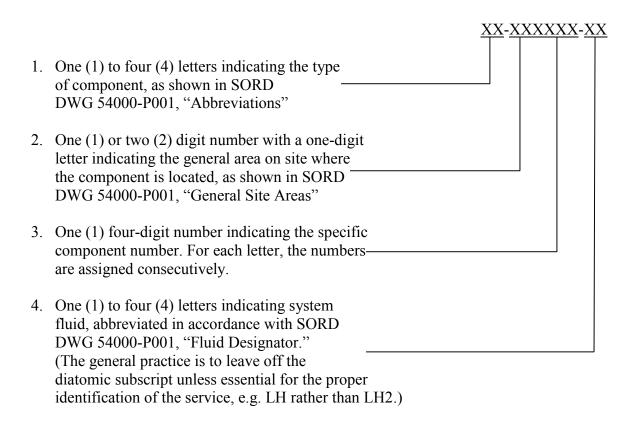
5.2.3 Wire Method

Plates may be attached by wire on or near the component. If wire is used, a 1/16 inch hole is placed in each corner of the plate, and the plate is attached by stainless steel wire.

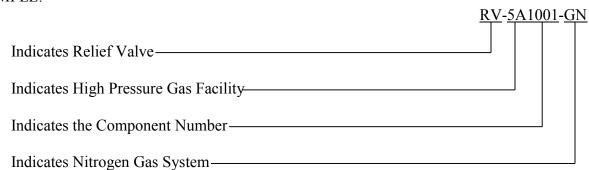
6.0 COMPONENT LOCATOR NUMBERS

- a. All critical mechanical component locations within a system shall be assigned a Component Locator Number by CEF.
- b. The Component Locator Number is assigned as follows:

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EXAMPLE:



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6.1 Numbers For Replacement Plates

For replacement of worn-out or otherwise destroyed component locator plates, the existing component locator numbers shall be used.

6.2 Numbers For New Locations

For new locations, component locator numbers shall be obtained from CEF.

7.0 ID NUMBERS FOR SSC TANKS AND VESSELS

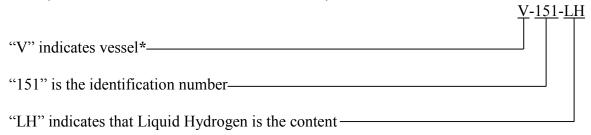
7.1 General Number Assignment

- a. All SSC vessels and tanks shall have an ID number assigned by CEF.
- b. The ID number shall be assigned as follows:

SORD DWG 54000-P001, "Fluid Designators"

One (1) letter indicating the type of tank or vessel, as shown in SORD DWG 54000-P001 "Abbreviations"
 Three (3) digit tank or vessel ID number
 One (1) to four (4) letter code indicating the contents of the vessel or tank, as shown in

EXAMPLE: (Where V-151-LH is the current ID number)



*Note: Unless indicated by Revision 11 or later revision of SORD DWG 54000-P001, "V" code is also used to designate pressure vessels and tanks.

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7.2 Pressure Vessel ID Number Database

- a. Synergy-Achieving Consolidated Operations and Maintenance (SACOM) shall maintain a log of all pressure vessel ID numbers.
- b. At a minimum, the Pressure Vessel ID Number Database shall track all inspections, recertifications, EMI packages, or technical procedure packages that were generated for each pressure vessel.

8.0 PIPING COMPONENTS

Components included in this scope are hand valves, pressure control valves, check valves, motor valves, filters and filter elements, flow control valves, solenoid valves, relief valves, convoluted flexible hose assemblies, expansion joints and screen.

Components are categorized as SORDized (those supported by the Site-wide Operational and Repair Documentation) and non-SORDized (those not supported by the Site-wide Operational and Repair Documentation but supported by manufacturer's specifications).

8.1 Hand-operated Pressure Control Valves (PCVs)

Transfer identification information to the body of the valve. Information shall include the following:

a. SORDized

- 1. Manufacturer
- 2. Manufacturer's part number
- 3. Specification Control Number (SORD)
- 4. Serial number
- 5. Design pressure

b. Non-SORDized

- 1. Manufacturer
- 2. Manufacturer's part number and/or model number
- 3. Serial number
- 4. Corps of Engineers (COE) number (if assigned)
- 5. Design pressure

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8.2 Hand Valves, Check Valves, Motor Valves, Filters and Filter Elements, Automatic PCVs, Flow Control Valves, Solenoid Valves, Expansion Joints, and Screens

Transfer identification information from handles, operators and other locations (either permanently or temporarily attached) to the body base or other specific areas of the component designated by Engineering or other approved documentation.

a. SORDized

- 1. Manufacturer
- 2. Manufacturer's part number
- 3. Specification Control Drawing number
- 4. Serial number
- 5. Design pressure

b. Non-SORDized

- 1. Manufacturer
- 2. Manufacturer's part number and/or model number
- 3. Serial number
- 4. COE number (if assigned)
- 5. Design pressure

NOTE: Due to lack of space on the body base of some components or due to physical configuration of some components, it may be necessary to put identification information on stainless steel tape and attach the tape to the components. The tape shall be attached with stainless steel wire.

8.3 Relief Valves

Identification information on the Relief Valve shall include:

a. SORDized

- 1. Manufacturer
- 2. Manufacturer's Part Number
- 3. Specification Control Drawing number
- 4. Serial number

b. Non-SORDized

- 1. Manufacturer
- 2. Manufacturer's Part Number and/or Model Number
- 3. Serial Number

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- 4. COE Number (if assigned)
- 5. Inlet Size x Outlet Size x Orifice Size

8.4 Convoluted Flexible Hose Assemblies

Identification information on the flange assembly shall include:

- a. SORDized
 - 1. Manufacturer
 - 2. Serial Number
 - 3. Specification Control Drawing Number
 - 4. Manufacturer's Part Number
- b. Non-SORDized
 - 1. Manufacturer
 - 2. Manufacturer's Part Number and/or Model Number
 - 3. Serial Number
 - 4. COE Number (if assigned)
 - 5. Type Number

9.0 SCD NUMBERS

Each mechanical component with an existing SCD shall have a component SCD number assigned by CEF in the format described in this standard. SCD numbers shall not be assigned to a component that has no SCD drawing as referenced in SSTD-8070-0006-CONFIG and SSTD-8070-0001-CONFIG.

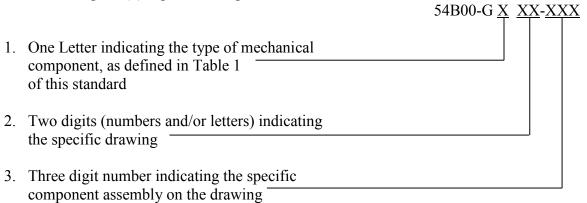
9.1 Effect of Change Requests (CR) on SCD Numbers

- a. Any modification to a mechanical component as a result of a CR shall necessitate changing the specific component assembly number on the SCD (e.g. 54B00-GV56-002 would become 54B00-GV56-003).
- b. All CRs issued against a mechanical component before the component was added to the SORD system shall be incorporated into the basic SORD SCD.
- c. CRs issued after the component is added to the system require revisions to the basic SORD SCD.

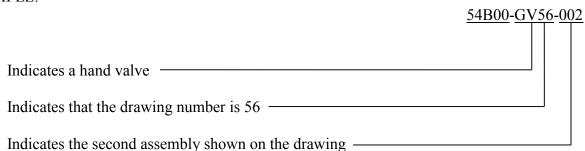
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9.2 SCD Number Format

- a. The SCD number is an alphanumeric number of 12 digits.
- b. The first six (6) digits, derived from the SORD Family Tree drawing, are always 54B00-G.
 - 1. The five (5) defines the major category as Standard.
 - 2. The four (4) defines the sub-category as Mechanical.
 - 3. The "B" defines the specific category as Component.
 - 4. The double zero (00) defines the location as Site-wide.
 - 5. The "G" defines the drawing type as Design Specification.
- c. The remaining six (6) digits are assigned as follows:



EXAMPLE:



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TABLE 1
Mechanical Component Identification Letter Codes*

LETTER	COMPONENT TYPE	LETTER	COMPONENT TYPE
A	Control Package	N	Level Control Valve
В	Control Valve	P	Pressure Control Valve
С	Check Valve	Q	Not Assigned
D	Dome Loader	R	Relief Valve
Е	Expansion Joint	S	Strainer
F	Flex Hose	T	Not Assigned
G	Gas Filter	U	Not Assigned
Н	Flow Meter	V	Hand Valve
J	GJ-Gage (Pressure Indicator)	W	Accumulator (Vessel)
K	Pump	X	Actuator
L	Liquid Filter	Y	Diaphragm
M	Motor Valve	Z	Solenoid Valve

^{*}Verify codes per latest version of SSTD-8070-0001-CONFIG.

10.0 RECORDS AND FORMS

Records and forms required by the procedures of this standard shall be maintained in accordance with SPR 1440.1. All records and forms are assumed to be the latest edition unless otherwise indicated. Forms may be obtained from the SSC Electronic Forms repository or from the NASA SSC Forms Management Officer. Quality Records are identified in the SSC Master Records Index.

11.0 ACRONYMS AND ABBREVIATIONS

CEF	Central Engineering Files
COE	Corps of Engineers
CR	Change Request
0	degrees
DWG	Drawing
F	Fahrenheit
GH	Gaseous Hydrogen
GOX	Gaseous Oxygen
ID	Identification Number
LH	Liquid Hydrogen
LOX	Liquid Oxygen
NASA	National Aeronautics and Space Administration

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PCV Pressure Control Valve RP Rocket Propellant

RTV Room Temperature Vulcanizing

RV Relief Valve

SACOM Synergy-Achieving Consolidated Operations and Maintenance

SCD Specification Control Drawing

SORD Site-wide Operational and Repair Documents

SSC John C. Stennis Space Center

SSTD John C. Stennis Space Center Standard SPR Stennis Procedural Requirements